

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Richard S. Valpey III *et al.*

Serial No.: 10/691,046

Filed: October 22, 2003

Title: PROCESS AND COMPOSITION FOR PRODUCING
SELF-CLEANING SURFACES FROM AQUEOUS SYSTEMS

Art Unit: 1751

Examiner: Brian P. Mruk

DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450


1. I am the first named inventor for the above-identified patent application.
2. I have read the Office Action of June 5, 2006, and have reviewed U.S. Patent No. 5,256,328 to Cavanagh *et al.* and PCT International Publication No. WO 01/96511 A2 which were cited in the Office Action.
3. I have noted that the formulations of Cavanagh include 35.0-75.0 weight percent nanoparticles and 0.2-10.0 weight percent surfactant.
4. In our studies related to the invention of the above-identified patent application, we determined that if the nanoparticles in a mixture flocculate, the mixture becomes cloudy, making it difficult to produce a transparent coating from the mixture.
5. Due to the high amounts of nanoparticles (35-75%) and the relatively low amounts of surfactant (0.2-10%) in the compositions of Cavanagh, I believe that the

compositions of Cavanagh would become cloudy due to flocculation of the nanoparticles. Therefore, I believe that the compositions of Cavanagh would not readily form a transparent coating as in the invention of the above-identified patent application.

6. Referring now to PCT International Publication No. WO 01/96511 A2, I have noted that the methods of this publication seek to form "hydrophilic" surfaces (e.g., page 47, line 23 and claim 1 of WO 01/96511 A2). Hydrophilic surfaces have surface energies that are not significantly below 72 dynes per centimeter. Original claim 22 of the above-identified patent application recited a surface with a surface energy below 30 dynes per centimeter. This surface energy is associated with hydrophobic surfaces, i.e. it is well below a surface energy value associated with a hydrophilic surface.

7. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the above-identified application or any patent issuing thereon.

Dated: 5 September, 2006



Richard S. Valpey III, Ph.D.

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